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RESEARCH ARTICLE

RECURRENT ALTERNATING LOWER MOTOR NEURON FACIAL PALSY: A RARE NEUROBORRELIOSIS MIMIC IN AN INDIAN FEMALE

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ABSTRACT

Recurrent alternating lower motor neuron (LMN) facial palsy is uncommon, and often attributed to idiopathic or viral causes. Lyme disease (neuroborreliosis), although rare in India, must be considered in recurrent cranial neuropathies with lymphocytic CSF and equivocal serology. We report a 24-year-old female with two episodes of LMN facial palsy on opposite sides, 10 years apart, with final recovery after doxycycline—highlighting the need to include Lyme disease in differential diagnoses even in non-endemic areas.

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INTRODUCTION

Bell's palsy is a common cranial mononeuropathy; however, recurrent LMN facial palsy, especially with alternating laterality, necessitates evaluation for uncommon causes. Lyme neuroborreliosis (LNB), caused by Borrelia burgdorferi, is an infectious differential—typically underrecognized in non-endemic regions like India. This case illustrates the diagnostic complexity and therapeutic value of empiric antibiotic therapy in suspected neuroborreliosis with equivocal serology and CSF pleocytosis.

CASE PRESENTATION

A 24-year-old female presented to the neurology outpatient department with difficulty in closing her right eye and deviation of the mouth to the left side for the past 5 days. She reported a similar episode involving the left side of her face 10 years prior, which resolved completely with treatment received elsewhere. There was no history of fever, trauma, ear discharge, rashes, joint pain, menorrhagia, vomiting, or systemic symptoms. Neurological review revealed no history of altered smell, diplopia, dysphagia, neck drop, limb weakness, or respiratory involvement.

Examination Findings

- **Higher mental functions:** Normal
- **Cranial nerves:** Right-sided LMN facial palsy
- **Motor, sensory, cerebellar:** Normal
- **Plantars:** Flexor bilaterally
- **Spine and gait:** Normal

Investigations

- **Routine biochemistry including RBS and TSH:** Normal
- **ANA, ANCA, serum ACE:** Normal
- **Peripheral smear and chest X-ray: Normal**
- **MRI brain and paranasal sinuses:** Normal
- **Viral markers and VDRL:** Non-reactive
- **CSF analysis:** Lymphocytic pleocytosis, normal protein, no organisms
- **Lyme serology (ELISA):** Equivocal IgM

Management: Patient initially received a course of antivirals and steroids with partial improvement. In view of lymphocytic CSF and equivocal Lyme serology, empiric oral doxycycline was initiated. The patient showed complete clinical recovery within two weeks.

DISCUSSION

Facial nerve palsy is most commonly idiopathic, but recurrent or alternating presentations should prompt evaluation for rare etiologies. Neuroborreliosis, especially in the early disseminated phase, is known to cause cranial neuritis, most frequently involving the facial nerve. Though bilateral facial palsy is more commonly reported in LNB, alternating unilateral palsies over years are rarely described but documented. In this patient, a combination of: Alternating LMN facial palsy, CSF lymphocytic pleocytosis, Equivocal IgM Lyme serology, and Favorable doxycycline response supports a presumptive diagnosis of Lyme neuroborreliosis. While false positives and negatives can occur with ELISA, in resource-limited or low-prevalence settings, empirical treatment in clinically suggestive cases may be justified. Few cases of alternating facial palsy due to Lyme have been reported, most from endemic zones. Our case adds to the limited literature and emphasizes vigilance in non-endemic regions like India, where tick exposure may go unnoticed and serological sensitivity is variable.

CONCLUSION

This case highlights that Lyme disease should be considered in recurrent LMN facial palsy, even in non-endemic areas. Empirical treatment with doxycycline in the presence of supportive CSF findings and equivocal serology may result in complete recovery. It underlines the academic importance of recognizing neuroinfectious mimics in otherwise idiopathic cranial nerve palsies and advocates for broader awareness of Lyme neuroborreliosis spectrum.

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